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## **Abstract**

This paper offers a new and intuitive approach using cross-sectional census data spanning several decades to cast light on earnings mobility. We derive “mobility ratios” and “immobility ratios” to generate a general impression of the economic fortunes of each cohort as each generation goes through the life cycle, including the speed of upward mobility. We demonstrate that, in Hong Kong, during the rapid economic growth period of the 60s and 70s, upward mobility opportunities were increasing rapidly, but for those born in the mid 70s and later who enter the labour force after the mid 1990s, the opportunities for upward mobility had declined—a rather global phenomenon for most mature economies. However, the latest data shows that a possible reversal in the pattern may be taking shape. The evidence suggests that this improvement is related to the retirement of the babyboomers, which has triggered a train of promotions for the various cohorts. These promotions have however mainly benefited those who are skilled or who are ready to take advantage of the opportunities.

## **1. Introduction**

Earnings mobility describes the movement of a household or an individual from one income group to another within one's lifetime. This is determined in part by the person's effort and in part by circumstances. A high degree of upward earnings mobility is generally considered conducive to a vibrant and harmonious society. Generally, however, availability of longitudinal data is considered necessary to gauge the degree of upward earnings mobility. For example, Chen (2009) drew upon the longitudinal data in Canada, U.S., Great Britain and Germany from the Cross-National Equivalent Files (CNEF) and made a cross-nation comparison in mobility between different income brackets during the 1990s and early 2000s; Burkhauser, Holtz-Eakin and Rhody (1997) utilized the Panel Study of Income Dynamics (PSID) in the U.S. and the Germany Socio-Economic Panel (GSEP) in Germany to compare earnings mobility for the two countries during the 1980s. One common approach of measuring earnings mobility is to construct transition matrices portraying the movement of people from an income group to another group over time (Dickens and McKnight, 2008; Eriksson, 1998). Contini, Filippi and Villosio (1998) estimated logit models to analyze how individual and firm characteristics may affect the probability of moving up or down the economic ladder.

A big problem is often encountered when such longitudinal data covering a sufficiently long period is not available. In Hong Kong in particular, where there is a widespread sense of a decline in upward mobility among people, hard evidence is difficult to find. During the time of "hyper growth" from the 1960s and the 1970s, Hong Kong was considered a place with plenty of opportunities for upward mobility, which was believed to be within reach for those who would make the effort (Chen, 1979). More recently, however, there have been numerous references to reduced upward mobility in the public debate without much data backing the

claims<sup>1</sup>. This paper attempts to overcome this problem by using cross-sectional Census data collected across several decades. Such data, admittedly, cannot really serve as a complete substitute for longitudinal data. But as we will show, it is nevertheless possible to uncover interesting patterns and information about how the degree of upward mobility has changed over the years.

The rest of the paper is structured as follows. Section 2 will provide an overview of findings about earnings mobility in Hong Kong to date. Section 3 will introduce the data and research methodology adopted in our study. Section 4 will give a discussion of the results. Section 5 will summarize the main findings of the paper.

## **2. Review of Previous Studies on Earnings Mobility in Hong Kong**

The absence of longitudinal data for Hong Kong has for a long time inhibited serious empirical studies on earnings mobility, even though scholars, particularly sociologists, have shown much interest on the subject. Common approaches like transition matrices and logistic regressions on estimating the probabilities of upward or downward mobility cannot be adopted without longitudinal data. Siu (2001) is amongst the very few studies which tried to investigate the issue based on cross-sectional data despite its limitations<sup>2</sup>. General Household Survey (GHS) data with information of *recalled earnings* in 1991 and 1996 and actual earnings in 2000 were used<sup>3</sup>. Based on the results from the correlation of log earnings and transition matrices, it was found that there was significant overall earnings mobility in the 1990s. Younger and higher

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<sup>1</sup> For example, see the commentary by King Wah Fu and Siu Fai Yip in Hong Kong Economic Journal, April 16, 2010. Some studies, such as Siu (2001), resort to self-reported mobility over some period in the past.

<sup>2</sup> Apart from small sample problem and reporting errors, this approach cannot produce data that allow a comparison between earnings mobility for different cohorts at the same stage in their life cycles.

<sup>3</sup> As mentioned in Siu (2001), respondents were asked a set of supplementary questions such as their past earnings during the General Household Survey in the fourth quarter of 2000.

educated workers had a better chance of moving upwards, while those who were older and who had lower educational attainment faced a higher risk of moving downwards or being trapped at the bottom. This approach, however, does not allow analysis about the different fortunes faced by different cohorts in different phases in their careers.

The Commission on Poverty (2006) provided a summary of a study conducted by Jim Vere in 2006 over the period from 1996 to 2005. The study comprised two parts with investigations on intragenerational and intergenerational mobility. The intragenerational study was based on the same approach as that used in Siu (2001), while the intergenerational study was based on the correlation of lifetime earnings between father and child. The target of Vere's study was restricted to workers with positive monthly earnings in 1996, 2001 and 2005<sup>4</sup>. Although mobility in terms of earnings was still evident during the period 1996 to 2005, both upward and downward mobility appeared to have decreased across all types of workers compared with the findings in Siu (2001) which covered the period from 1991 to 2000. Though upward mobility was adversely affected by the Asian Financial Crisis and the outbreak of SARS, downward mobility was also reduced. As to intergenerational mobility, it was found that the lifetime earnings of father and child were positively correlated and the correlation was statistically significant. Nevertheless, intergenerational poverty was not a serious problem in Hong Kong. Some 87% of children with fathers in the bottom earning quintile group was found to have moved upwards.

Vere (2010) was an update of Siu (2001) and Vere (2006) and again utilized information of recalled earnings in 1998 and 2003 and actual earnings in 2008. Compared to the findings of the 2006 study, mobility has declined, with the largest decline being for workers in the higher

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<sup>4</sup> The earnings data in 1996 and 2001 were collected based on respondents' memory.

income brackets. Downward mobility increased more frequently for higher income brackets, while upward mobility increased more frequently for the lower income brackets. “Intergenerational mobility”, which focuses on the relationships between parents’ and children’s lifetime earnings, was within the standard range for developed countries, being somewhere between the United Kingdom and western European countries despite the slight decline since the study in 2006.

Notwithstanding the apparent statistical significance, all three studies have certain drawbacks. First, there may be a self-selection problem as a sample that includes workers reporting positive monthly earnings in all the reference years would produce a skew towards workers with higher abilities. Those workers may have a better chance to remain in the labour market consistently. Second, all recalled information may be subject to errors, as acknowledged by Siu (2001) and Vere (2010) themselves. Third, the analysis based on three reference years only can be affected by transitory fluctuations in earnings that characterize those years.

The most recent study on earnings mobility in Hong Kong to date was conducted by the Economic Analysis and Business Facilitation Unit of the Financial Secretary’s Office from the HKSAR Government (2016). Information on post-secondary graduates’ demographic information from the Student Finance Office (SFO) was linked to their subsequent earnings history from the Inland Revenue Department (IRD), as reported by their employers. The analysis was based on movements across earnings deciles over the years. It was found that substantial upward earnings mobility was enjoyed by first degree graduates from the 2001/02 and 2006/07 cohorts. Sub-degree graduates or below for the 2001/02 cohort also enjoyed substantial upward earnings mobility.

### 3. Data and Research Methodology

Though there is no panel data of workers available in Hong Kong, we can follow cohorts of workers through their randomly selected representatives in each census or by-census year. The approach requires the assumption that the composition of the population in each cohort is not significantly changed through the years. In general, the composition of the population in each cohort will change through immigration, emigration, growing of age, and death, while the composition of the working population may further change through entry and exit from the labor force. According to Census data, the percentage of Hong Kong's population with residence at or over 10 years has ranged from 80% to 83% in 2001, 2006, and 2011 while the percentage of Cantonese speaking population has remained within the range of 89.2% to 90.8%. It appears that even though immigration and emigration continue to occur through the years, the main characteristics of the population have not significantly changed over the years. This allows us to infer the *probability* of a randomly picked worker from an age group who belongs to an income range from the *percentage* of the working population of an age group who enjoy such incomes.

The datasets used in this study include: the 1986 by-census (1% sample), the 1991 census (5% sample), the 1996 by-census (5% sample), the 2001 census (1% sample), the 2006 by-census (1% sample) and the 2011 census (5% sample). The Hong Kong Population Census is carried out by the Hong Kong Census and Statistics Department (HKCSD) every ten years and includes everybody physically in Hong Kong on the Census day, while the By-census is carried out in between every two censuses and is based on a large random sample. All data are collected by the HKCSD and are considered highly reliable. The sizes of the datasets are sufficiently large and representative for us to define cohorts for meaningful analysis. Data are selected for analysis based on three criteria. First, we only count those people who are in the



labour market with monthly income greater than zero<sup>5</sup>. Second, only Hong Kong natives and Chinese immigrants are included. Third, all subjects without occupation information are dropped.

Table A1 in the Appendix shows the respective age and sample size within each cohort in each census and each by-census year. The number of workers sampled for each cohort that can be identified varies from 2978 to 23729 depending on whether it is a 1% sample or a 5% sample and whether it is a census year or a by-census year. We identified a total of six cohorts each of which consists of those born within a five-year period, with the earliest cohort born in 1961-1965 (called the first cohort) and the latest cohort born in 1986-1990 (the 6<sup>th</sup> cohort). The cohorts are traced starting from age 21 to 25 through 5-year intervals. In each survey year, the workers in each cohort are sorted into three income groups, namely those earning less than half of median income, which falls into the official definition of “poor”, (called “poor”), those earning more than 150% of the median income, (called “well-off”); and those earning incomes in between. Alternatively, we also define “poor in absolute terms” (“absolute poor”) as earning \$10000 (at 2012 prices) or less a month, those earning \$25000 or more (again at 2012 prices) a month as “well-off in absolute terms” (“absolute well-off”), and those earning incomes in between these thresholds<sup>6</sup>.

We use the concepts of “well-off rate” and “poor rate” in relative and absolute terms to infer the probability of a randomly picked worker from an age group who are well-off or poor in a particular year. Since we refer to median incomes, current prices or constant prices will not affect the ratios.

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<sup>5</sup> Because we do not exclusively include workers who consistently have gainful employment in all the surveys, our approach is not subject to the same sample selection bias as in Siu (2001) and Vere (2010).

<sup>6</sup> The wage data refer to an individuals’ monthly income from main employment.

The “**relative well-off rate**” (RWR) is defined as the percentage of workers within a given cohort who achieve 1.5 times the median income. The RWR may be interpreted as the probability of a worker randomly picked from the cohort who makes 1.5 times median earnings. Since the median earnings changes from cohort to cohort, the real purchasing power of cut-off point for the relatively well-off rate is not constant.

The “**absolute well-off rate**” (AWR) is defined as the percentage of workers within a given cohort who achieve at least \$25,000 monthly income (at 2012 prices). This is almost 2.5 times the median employment earnings as of 2011<sup>7</sup> (excluding foreign domestic helpers).

The “**relative poor rate**” (RPR) is defined as the percentage of workers within a given cohort who earn less than half the median income. The RPR may be interpreted as the probability of a worker randomly picked from the cohort who makes less than one-half median earnings. Since the median earnings changes from cohort to cohort, the real purchasing power of cut-off point for the relative poor rate is not constant.

“The **absolute poor rate**” (APR) is the percentage of workers within a given cohort whose incomes are below \$10,000 per month (at 2012 prices). The APR can be interpreted as the probability of a worker picked randomly from a cohort who belongs to the income group below \$10,000 a month.

Using the figures of well-off rate and poor rate calculated in either relative or absolute terms, we compute “mobility ratio” and “immobility ratio” which capture a general impression of the

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<sup>7</sup> The 2011 Population Census Office, 2012.

economic fortunes of each cohort as they go through the life cycle, as well as to gauge the speed of mobility. Here are the detailed definitions:

The “**mobility ratio**” (MR) is obtained by dividing the well-off rate at the end of the period under study by that at the beginning of the period for a given cohort<sup>8</sup>. It shows the *speed of mobility into or out of the upper income class* over the period. An MR of 3 means that at the end of the period under study the likelihood of being well-off (relatively or absolutely) is three times as likely as that at the beginning of the period. An MR less than unity means *downward mobility* on average. This gives a sense of how fast the economic fortune of the cohort concerned improves.

The “**immobility ratio**” (IMR) is obtained by dividing the poor rate at the end of the period under study by that at the beginning of the period for a particular pseudo-cohort. A figure of 1 means that the likelihood of being poor is the same at the end of a period as at the beginning, implying absolute immobility. A figure of 0.50 means that the likelihood of being poor at the end of the period is half of that at the beginning, suggesting mobility. In principle a figure greater than 1 is possible. That would suggest increased chances of falling into the poor group.

The above two concepts are conceptually different from the “mobility ratio” or “immobility ratio” in the literature, notwithstanding some apparent similarity<sup>9</sup>. (Im)mobility ratio is often defined as follows:

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<sup>8</sup> In our study, we extract data from different census or by-census that may be called “pseudo cohorts” as the age groupings from the various censuses or by censuses selected are such that they track the same cohort over time. See

<http://webarchive.nationalarchives.gov.uk/20130401151715/http://www.education.gov.uk/publications/eOrderingDownload/RR621.pdf>

<sup>9</sup> ‘Mobility ratio’ is often the alternative terminology of ‘immobility ratio’ in the literature (Aleksandra, 2012; Atkinson, Bourguignon, and Morrisson, 1992; Field, 2001; Zhuang, 2011).

*“Immobility ratio is the fraction of income recipients who remain in the same quintile as before... The immobility ratio indicates the fraction of people who remain in or change quintiles. However, it gives no indication of how many quintiles the movers move.”* (Fields, 2001, p. 116).

*“The immobility ratio, defined as the fraction of households that remain in the same quintile...”* (Kolasa, 2012, p. 8).

*“Immobility ratio, which measures the percentage of households remaining in the same quintile or nearby...”* (Zhuang, 2011, p. 396).

Our concepts of mobility ratio (immobility ratio) is interpreted as speed of moving into (out of) the upper (lower) income class rather than the probability of staying in that class. It is derived from cross-sectional information of pseudo-cohort and is similar to the mobility rates calculated in the Oxford Mobility Study of 1972 (Goldthorpe, 1987). The mobility (immobility) ratio is obtained by dividing the percentage of those who are relatively well off (those who are relatively poor) at a time by this percentage at an earlier point of time. The larger the magnitude of mobility ratio, the faster the mobility is involved for the particular cohort. In contrast, the larger the magnitude of the immobility ratio, the slower the mobility is involved for the particular cohort.

## **4. Results**

### **4.1 Relative Mobility**

As shown in **Table 1**, the relative well-off rate for the cohort born 1961-1965 (called the first cohort) rose from 11.72% to 31.41% in five years and then to 36.39% in ten years. The “relative well-off rate” further rises to just below 48% and then actually starts falling again

over the years. The 5-year mobility ratio was 2.68. This means that a person is around 3 times more likely to be in the “well off” category at the end of the 5-year period as at the beginning. The 10-year mobility ratio was much higher, at 3.105, suggesting rapid improvement. The increase in the immobility ratio in ten years suggests an increased percentage of people who remain poor within ten years. But this effect could be due to an inflow of immigrants who earn low salaries.

**Table 1: The percentage of workers who are relatively poor and the percentage of those who are relatively well-off, first cohort (born 1961-1965), with calculation of the immobility ratio and the mobility ratio**

	(1)	(2)	(3)	(4)	(5)	(6)	5-Yr Ratio (1986-1991) (Column 2/ Column 1)	10-Yr Ratio (1986-1996) (Column 3/ Column 1)
	21-25 in 1986	26-30 in 1991	31-35 in 1996	36-40 in 2001	41-45 in 2006	46-50 in 2011		
<b>Relative poor rate (%) of those with less than 50% of the median wage (RPR)</b>	6.47%	4.09%	5.53%	8.36%	10.01%	8.35%	0.63 (IMR)	0.85 (IMR)
<b>Relative well-off rate (%) of those with more than 150% of the median wage (RWR)</b>	11.72%	31.41%	36.39%	47.91%	43.55%	40.35%	2.68 (MR)	3.10 (MR)
<i>N</i>	4,572	21,883	23,709	4,619	4,776	23,729	--	--

**Table 2: The percentage of workers who are relatively poor and relatively well-off, second cohort (born 1966-1970), with calculation of the immobility ratio and the mobility ratio**

	(1)	(2)	(3)	(4)	(5)	5-Yr Ratio (1991-1996) (Column 2/ Column 1)	10-Yr Ratio (1991-2001) (Column 3/ Column 1)
	21-25 in 1991	26-30 in 1996	31-35 in 2001	36-40 in 2006	41-45 in 2011		
<b>Relative poor rate (%) of those with less than 50% of the median wage (RPR)</b>	4.40%	4.36%	5.75%	9.09%	7.24%	0.99 (IMR)	1.31 (IMR)
<b>Relative well-off rate (%) of those with more than 150% of the median wage (RWR)</b>	14.02%	27.98%	47.94%	45.43%	44.28%	1.996 (MR)	3.419 (MR)
<i>N</i>	16,911	20,472	4,122	3,971	20,245	--	--

**Table 2** shows that the second cohort, those born within 1966-1970, has a much lower 5-year mobility ratio. But this cohort started with a bigger percentage of well off workers, and the well-off rate rose to just under 48% by the time the cohort reaches 31-35, again better than the first cohort. At the low end, people started better off, with less people earning a low wage. However, just as in the case of the first cohort, the poor rate rose continually and exceeded 9% by the time they reach 36-40. This happened notwithstanding continued upward mobility at the high end. Overall at the higher end the second cohort fares better than the first cohort, but at the lower end it seems to fare worse.

**Table 3: The percentage of workers who are relatively poor and relatively well-off, third cohort (born 1971-1975), with calculation of the immobility ratio and the mobility ratio**

	(1)	(2)	(3)	(4)	5-Yr Ratio (1996-2001) (Column 2/ Column 1)	10-Yr Ratio (1996-2006) (Column 3/ Column 1)
	21-25 in 1996	26-30 in 2001	31-35 in 2006	36-40 in 2011		
<b>Relative poor rate (%) of those with less than 50% of the median wage (RPR)</b>	5.44%	4.01%	6.38%	5.90%	0.74 (IMR)	1.17 (IMR)
<b>Relative well-off rate (%) of those with more than 150% of the median wage (RWR)</b>	11.39%	38.04%	44.90%	46.40%	3.34 (MR)	3.94 (MR)
<i>N</i>	16,585	3,791	3,869	19,703	--	--

**Table 3** shows the mobility pattern of the cohort born 1971-1975 (called the third cohort). This cohort starts with a lower percentage of well off workers, but the mobility ratio has jumped. The well-off rate more than tripled within 5 years and reached to a shade below 47% after 20 years, higher than the 44.28% for the previous cohort at the same stage of their careers. At the low end, the 10-year immobility ratio is lower than that for the second cohort, suggesting quicker upward mobility at the low end. At the high end, the 10-year mobility ratio has increased to 3.942, suggesting quicker upward mobility at the high end. This generation enjoys by far the best opportunities of upward mobility among all cohorts, both at the low end and the high end.

**Table 4: The percentage of workers who are relatively poor and relatively well-off, fourth cohort (born 1976-1980), with calculation of the immobility ratio and the mobility ratio**

	(1)	(2)	(3)	5-Yr Ratio (2001-2006) (Column 2/ Column 1)	10-Yr Ratio (2001-2011) (Column 3/ Column 1)
	21-25 in 2001	26-30 in 2006	31-35 in 2011		
<b>Relative poor rate (%) of those with less than 50% of the median wage (RPR)</b>	7.54%	5.93%	4.27%	0.79 (IMR)	0.57 (IMR)
<b>Relative well-off rate (%) of those with more than 150% of the median wage (RWR)</b>	14.74%	28.56%	43.89%	1.94 (MR)	2.98 (MR)
<i>N</i>	3,052	3,642	19,002	--	--

For the fourth cohort, born 1976-1980, the relative well-off rate among workers at the beginning of their careers (i.e., age from 21 to 25) is the highest ever, at 14.74% (**Table 4**). The 5-year mobility ratio has fallen to 1.94. The well-off rate for the fourth cohort nevertheless still doubled in five years after they began their careers, to over 28% when they reached 26-30. Yet this is *lower* than the 38.04% for the third cohort at the same age. The 5-year immobility ratio at the low end has risen to 0.79, from 0.74 for those born five years earlier, clearly indicating lower mobility at the low end. Both developments suggest reduced upward mobility, notwithstanding a notable advantage at the beginning of the career.



**Table 5: The percentage of workers who are relatively poor and relatively well-off, fifth cohort (born 1981-1985), with calculation of the immobility ratio and the mobility ratio**

	(1)	(2)	5-Yr Ratio (2006-2011) (Column 2/ Column 1)
	Age 21-25 in 2006	Age 26-30 in 2011	
<b>Relative poor rate (%) of those with less than 50% of the median wage (RPR)</b>	12.42%	4.10%	0.33 (IMR)
<b>Relative well-off rate (%) of those with more than 150% of the median wage (RWR)</b>	7.62%	31.21%	4.10 (MR)
<i>N</i>	2,978	19,493	--

There is some good news about the fifth cohort, namely those born 81-85 (**Table 5**). Assuming that the normal university graduation age is 22, this cohort should be graduates in 2003-07. This is more or less the same age group as surveyed by the government study (Economic Analysis and Business Facilitation Unit, 2016). Although this cohort generally started their careers *poorer* than the previous cohort— with a higher poor rate and a lower well-off rate, mobility has clearly improved, with the well-off rate quadrupling in five years. Specifically, the 5-year immobility ratio is lower, and the 5-year mobility ratio is higher, compared to the previous cohort, indicating that this cohort does enjoy upward mobility both at the lower end and at the upper end. This supports the findings of the HKSAR government’s report that there was substantial upward earnings mobility for the cohorts after the 2000s (Economic Analysis and Business Facilitation Unit, 2016).The RWR five years into their careers, at 31.21%, is higher than that of the fourth cohort, which is a mere 28.56% at the same stage of their careers, though this is still lower than that of the third cohort.

## 4.2 Absolute Mobility

As shown in **Table 6**, the absolute well-off rate (AWR) for the first cohort rose from 0.26% to 5.9% in five years and then to 16.26% in ten years. The AWR appears to settle down to just below 26% without further improvement. The 5-year mobility ratio was 22.69. This means that a person is 23 times more likely to be in the “well-off” category at the end of the 5-year period as at the beginning. The 10-year mobility ratio was much higher, at 62.538, suggesting rapid improvement<sup>10</sup>. The decline in the immobility ratio from 0.51 in five years to 0.34 in ten years suggests a greatly reduced percentage of people who remain poor within ten years. A fall in the immobility ratio suggests upward mobility, as does a rise in the mobility ratio.

**Table 6: The percentage of workers with monthly income <\$10,000 or ≥\$25,000 at 2012 prices, first cohort (born 1961-1965), with calculation of the immobility ratio and the mobility ratio**

	(1)	(2)	(3)	(4)	(5)	(6)	5-Yr Ratio (1986-1991) (Column 2/ Column 1)	10-Yr Ratio (1986-1996) (Column 3/ Column 1)
	21-25 in 1986	26-30 in 1991	31-35 in 1996	36-40 in 2001	41-45 in 2006	46-50 in 2011		
<b>Absolute poor rate with monthly income &lt;\$10,000 (APR)</b>	87.84%	44.49%	29.98%	24.20%	28.22%	31.99%	0.51 (IMR)	0.34 (IMR)
<b>Absolute well-off rate with monthly income ≥\$25,000 (AWR)</b>	0.26%	5.90%	16.26%	25.40%	25.84%	25.90%	22.69 (MR)	62.54 (MR)
<i>N</i>	4,572	21,883	23,709	4,619	4,776	23,729	--	--

**Table 7: The percentage of workers with monthly income <\$10,000 or ≥\$25,000 at 2012**

<sup>10</sup> The 15- and 20-year mobility ratios can also be computed, and they show further substantial improvement within another five or ten years.

prices, second cohort (born 1966-1970), with calculation of the immobility ratio and the mobility ratio

	(1)	(2)	(3)	(4)	(5)	5-Yr Ratio (1991-1996) (Column 2/ Column 1)	10-Yr Ratio (1991-2001) (Column 3/ Column 1)
	21-25 in 1991	26-30 in 1996	31-35 in 2001	36-40 in 2006	41-45 in 2011		
<b>Absolute poor rate with monthly income &lt;\$10,000 (APR)</b>	65.36%	31.95%	20.62%	25.23%	27.12%	0.49 (IMR)	0.31 (IMR)
<b>Absolute well-off rate with monthly income ≥\$25,000 (AWR)</b>	1.35%	9.82%	23.39%	26.01%	28.01%	7.27 (MR)	17.33 (MR)
<i>N</i>	16,911	20,472	4,122	3,971	20,245	--	--

**Table 7** shows that the second cohort, which was born within 1966-1970, has a much lower 5-year mobility ratio. But this cohort started with a bigger percentage of well-off workers, and the well-off rate *kept rising* and reaching 28% by the time the cohort reached 41-45. At the low end, only 21% remained poor in 2001. However, just as in the case of the first cohort, the poor rate rose after workers aged beyond some point, exceeding 27% by the time they reach 41-45 (2011). This happened notwithstanding continued upward mobility at the high end. This suggests that skilled people may move up, but the unskilled seem bonded to low incomes. Inflow of unskilled immigrants who earn low incomes could also have confounded the picture to an extent.

**Table 8: The percentage of workers with monthly income <\$10,000 or ≥\$25,000 at 2012 prices, third cohort (born 1971-1975), with calculation of the immobility ratio and the mobility ratio**

	(1)	(2)	(3)	(4)	5-Yr	10-Yr
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	<b>21-25 in 1996</b>	<b>26-30 in 2001</b>	<b>31-35 in 2006</b>	<b>36-40 in 2011</b>	<b>Ratio (1996-2001)</b>	<b>Ratio (1996-2006)</b>
<b>Absolute poor rate with monthly income &lt;\$10,000 (APR)</b>	50.87%	21.37%	19.80%	22.97%	0.42 (IMR)	0.39 (IMR)
<b>Absolute well-off rate with monthly income ≥\$25,000 (AWR)</b>	2.20%	14.03%	23.18%	28.96%	6.38 (MR)	10.54 (MR)
<b>N</b>	16,585	3,791	3,869	19,703	--	--

**Table 8** shows the mobility pattern of the cohort born 1971-1975 (called the third cohort). This cohort again starts with an even higher percentage of well-off workers (2.2%), testifying to expanding opportunities for high skill workers. The absolute well-off rate continues to climb, reaching a shade below 29% after 15 years, higher than the 26% for the previous cohort at the same stage of their life cycle (age 36-40). At the low end, the 10-year immobility ratio is higher than that for the second cohort, suggesting slower upward mobility at the low end. At the high end, the 10-year mobility ratio has declined to 10.54, suggesting slower upward mobility at the high end. We may still say, however, that this generation started off much better off than their predecessors, and that they continued to enjoy upward mobility opportunities.

**Table 9: The percentage of workers with monthly income <\$10,000 or ≥\$25,000 at 2012 prices, fourth cohort (born 1976-1980), with calculation of the immobility ratio and the mobility ratio**

	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>5-Yr Ratio (2001-2006)</b>	<b>10-Yr Ratio (2001-2011)</b>
	<b>21-25 in 2001</b>	<b>26-30 in 2006</b>	<b>31-35 in 2011</b>		
<b>Absolute poor rate with monthly income &lt;\$10,000 (APR)</b>	43.71%	25.40%	20.20%	0.58 (IMR)	0.46 (IMR)
<b>Absolute well-off rate with monthly income</b>	2.69%	10.82%	23.98%	4.02 (MR)	8.56 (MR)

$\geq$ \$25,000 (AWR)					
N	3,052	3,642	19,002	--	--

For the fourth cohort, born 1976-1980, the well-off rate among workers at the beginning of their careers (i.e., age from 21 to 25) is even higher, at 2.69% (**Table 9**). The 5-year mobility ratio has fallen to 4.02, the lowest among all cohorts so far. The well-off rate for the fourth cohort five years after they began their careers, in 2006, when they reached 26-30, is 10.82%, which is significantly *lower* than the 14.03% for the slightly younger cohort at the same age. The 5-year immobility ratio at the low end has risen to 0.58, from 0.42 for those born five years earlier, clearly indicating lower mobility at the low end. Both developments suggest reduced upward mobility. Still, this generation generally started off again better off than the earlier generation, since the poor rate for the 21-25 group is 43.71%, lower than the 50.87% of the cohort born 5 years earlier.

**Table 10: The percentage of workers with monthly income  $< \$10,000$  or  $\geq \$25,000$  at 2012 prices, fifth cohort (born 1981-1985), with calculation of the immobility ratio and the mobility ratio**

Monthly Income (at 2012 prices)	(1)	(2)	5-Yr Ratio (2006-2011)
	Age 21-25 in 2006	Age 26-30 in 2011	
Absolute poor rate with monthly income $< \$10,000$ (APR)	51.78%	25.92%	0.50 (IMR)
Absolute well-off rate with monthly income $\geq \$25,000$ (AWR)	1.48%	13.46%	9.09 (MR)
<i>N</i>	2,978	19,493	--

Just as our discussion about relative mobility, there is good news about the cohort born in 1981-1985 (Table 10). Although this “post 1980” cohort generally started their careers *poorer* than the previous cohort—with both a higher poor rate at the low end and a lower well-off rate at the high end, mobility has clearly improved at both ends, and this is the first time this ever occurred in Hong Kong. Specifically, the 5-year immobility ratio is lower, and the 5-year mobility ratio is higher, compared to the previous cohort, indicating that this cohort does enjoy upward mobility *both* at the lower end and at the upper end. The AWR, at 13.46%, is higher than that of the fourth cohort, which is 10.82% at the same stage of their careers.

## 5. Conclusions

The above discussion well demonstrates the usefulness of the proposed approach. We have shown how chances for upward mobility had improved in Hong Kong and then declined over the years for the different cohorts, and how these chances have recently improved again. We have shown that upward mobility can be quite different at the top end versus at the low end. For the fifth cohort, upward mobility at the low end continued to worsen, but that at the top end has clearly improved. For the sixth cohort, we do not have information on mobility.

**Table 11** and **Table 12** show that the first post-1980 cohort actually enjoyed dramatic upward mobility both at the top and at the bottom. By 26-30, the relative well off rate had jumped from 7.62% to 31.32%, while the relative poor rate had fallen from 12.42% to 4.10%, representing probably the most dramatic upward mobility in history. We have yet to know how they fare by 31-35 and beyond, but there is no question they did quite well relatively.

**Table 11: Relative well-off rates for different cohorts at different ages**

Age	Born in 1961-1965 “1st cohort”	Born in 1966-1970 “2nd cohort”	Born in 1971-1975 “3rd cohort”	Born in 1976-1980 “4th cohort”	Born in 1981-1985 “5th cohort”	Born in 1986-1990 “6th cohort”
<b>21-25</b>	11.72%	14.02%	11.39%	14.74%	7.62%	8.90%
<b>26-30</b>	31.41%	27.98%	38.04%	28.56%	31.21%	N.A.
<b>31-35</b>	36.39%	47.94%	44.90%	43.89%	N.A.	N.A.
<b>36-40</b>	47.91%	45.43%	46.40%	N.A.	N.A.	N.A.
<b>41-45</b>	43.55%	44.28%	N.A.	N.A.	N.A.	N.A.

Note: The shaded box shows an improvement of fortunes relative to the earlier cohort while at the same age, and this occurred in 2011.

**Table 12: Relative poor rates for different cohorts at different ages**

Age	Born in 1961-1965 “1st cohort”	Born in 1966-1970 “2nd cohort”	Born in 1971-1975 “3rd cohort”	Born in 1976-1980 “4th cohort”	Born in 1981-1985 “5th cohort”	Born in 1986-1990 “6th cohort”
<b>21-25</b>	6.47%	4.40%	5.44%	7.54%	12.42%	11.79%
<b>26-30</b>	4.09%	4.36%	4.01%	5.93%	4.10%	N.A.
<b>31-35</b>	5.53%	5.75%	6.38%	4.27%	N.A.	N.A.
<b>36-40</b>	8.36%	9.09%	5.90%	N.A.	N.A.	N.A.
<b>41-45</b>	10.01%	7.24%	N.A.	N.A.	N.A.	N.A.
<b>46-50</b>	8.35%	N.A.	N.A.	N.A.	N.A.	N.A.

N.A. = Not Available.

**Table 13** and **Table 14** give an idea of how the post 1980 cohorts fare in real terms. First of all, according to **Table 13**, only 1.48% of those aged 21-25 in the 5<sup>th</sup> cohort was well off, which was much lower than the 2.69% of the 4<sup>th</sup> cohort. However, by the time the 5<sup>th</sup> cohort reached 26-30, this jumped to 13.46%, noticeably higher than the figure for the 4<sup>th</sup> cohort. Moreover,

for the 6th cohort, 2.28% were well off at the beginning of their career, up from 1.48%. Turning to Table 14, 51.78% of the fifth cohort began their careers poorly, higher than the 43.71% of the previous cohort. But five years later, the poor rate fell to 25.92%, almost identical to that of the previous cohort. The presence of upward mobility at the low end is as clear as at the high end, even when we look at real incomes.

**Table 13: Absolute well-off rates for different cohorts at different ages, well off defined as \$25,000 or more at 2012 prices**

Age	Born in 1961-1965 “1st cohort”	Born in 1966-1970 “2nd cohort”	Born in 1971-1975 “3rd cohort”	Born in 1976-1980 “4th cohort”	Born in 1981-1985 “5th cohort”	Born in 1986-1990 “6th cohort”
21-25	0.26%	1.35%	2.20%	2.69%	1.48%*	2.28%
26-30	5.90%	9.82%	14.03%	10.82%	13.46%	N.A.
31-35	16.26%	23.39%	23.18%	23.98%	N.A.	N.A.
36-40	25.40%	26.01%	28.96%	N.A.	N.A.	N.A.
41-45	25.84%	28.01%	N.A.	N.A.	N.A.	N.A.

Note: The shaded box shows an improvement of fortunes relative to the earlier cohort at the same age, and all this shows up in the 2011 Census.

**Table 14: Absolute poor rates for different cohorts at different ages, poor defined as \$10,000 or less at 2012 prices**

Age	Born in 1961-1965 “1st cohort”	Born in 1966-1970 “2nd cohort”	Born in 1971-1975 “3rd cohort”	Born in 1976-1980 “4th cohort”	Born in 1981-1985 “5th cohort”	Born in 1986-1990 “6th cohort”
21-25	87.84%	65.36%	50.87%	43.71%	51.78%	53.80%
26-30	44.49%	31.95%	21.37%	25.40%	25.92%	N.A.
31-35	29.98%	20.62%	19.80%	20.20%	N.A.	N.A.
36-40	24.20%	25.23%	22.97%	N.A.	N.A.	N.A.
41-45	28.22%	27.12%	N.A.	N.A.	N.A.	N.A.

Note: The shaded boxes show successive declines in the absolute poor rate as the cohort goes into the next age bracket.

Interestingly, however, looking at absolute or real incomes, while upward mobility is improved in 2011 for ALL cohorts at the high end (**Table 13**), at the low end the improvement applied only to the younger cohorts (**Table 14**) from the 4<sup>th</sup> onwards, and largely eluded the earlier generations. This suggests that real improvement in upward mobility benefited essentially those who are highly skilled, who are better educated, or who are more experienced. Those



who are not so well educated and who took up low paying jobs did not benefit except for the highly experienced. This suggests that the recent improvement in upward mobility may have to do with the retirement of the postwar babyboomer generation. By 2011, someone born in 1945 had reached 66. Someone born in 1950 had reached 61. A rather massive retirement took place vacating senior positions and setting off a train of promotions that would benefit the highly skilled and highly educated, while leaving the low skilled and poorly educated behind.

**Table 15: The percentage of workers with monthly income <\$10,000 or  $\geq$ \$25,000 at 2012 prices, for all six cohorts, when aged 21-25**

	<b>Born in 1961-1965 Age 21-25 in 1986</b>	<b>Born in 1966-1970 Age 21-25 in 1991</b>	<b>Born in 1971-1975 Age 21-25 in 1996</b>	<b>Born in 1976-1980 Age 21-25 in 2001</b>	<b>Born in 1981-1985 Age 21-25 in 2006</b>	<b>Born in 1986-1990 Age 21-25 in 2011</b>
<b>Absolute poor rate with monthly income &lt;\$10,000 (APR)</b>	87.84%	65.36%	50.87%	43.71%	51.78%	53.80%
<b>Absolute well-off rate with monthly income <math>\geq</math>\$25,000 (AWR)</b>	0.26%	1.35%	2.20%	2.69%	1.48%	2.28%
<i>N</i>	4,572	16,911	16,585	3,052	2,978	13,657

**Table 15** shows that at the beginning of their career, a bigger percentage of the post 1980 cohorts were poor in the new millennium. But at the high end, 2.28% of those born in 1986-90 were well off in real dollar terms, up from 1.48% for the previous cohort. This is in addition to the improvement in mobility that we have already noted. This improvement in upward mobility is highlighted in **Table 16**.

**Table 16: Mobility and immobility ratios (in relative terms) for different cohorts (decline and rise compared with previous cohort at the same age)**

	<b>Born in 1961-1965 “1st cohort”</b>	<b>Born in 1966-1970 “2nd cohort”</b>	<b>Born in 1971-1975 “3rd cohort”</b>	<b>Born in 1976-1980 “4th cohort”</b>	<b>Born in 1981-1985 “5th cohort”</b>
<b>5-Yr Immobility Ratio</b>	0.632	0.991 (Rise)	0.737 (Decline)	0.786 (Rise)	0.330 (Decline)
<b>10-Yr Immobility Ratio</b>	0.855	1.307 (Rise)	1.173 (Rise)	0.566 (Decline)	N.A.
<b>5-Yr Mobility Ratio</b>	2.68	1.966 (Decline)	3.34 (Rise)	1.938 (Decline)	4.096 (Rise)
<b>10-Yr Mobility Ratio</b>	3.105	3.419 (Rise)	3.942 (Rise)	2.978 (Decline)	N.A.

Note: The shaded box shows an improvement of fortunes relative to the earlier cohort at the same age, and all this shows up in the 2011 Census.

**Table 17: Mobility and immobility ratios (in absolute terms) for different cohorts (decline and rise compared with previous cohort at the same age)**

	<b>Born in 1961-1965 “1st cohort”</b>	<b>Born in 1966-1970 “2nd cohort”</b>	<b>Born in 1971-1975 “3rd cohort”</b>	<b>Born in 1976-1980 “4th cohort”</b>	<b>Born in 1981-1985 “5th cohort”</b>
<b>5-Yr Immobility Ratio</b>	0.506	0.489 (Decline)	0.420 (Decline)	0.581 (Rise)	0.501 (Decline)
<b>10-Yr Immobility Ratio</b>	0.341	0.315 (Decline)	0.389 (Rise)	0.462 (Rise)	N.A.
<b>5-Yr Mobility Ratio</b>	22.692	7.274 (Decline)	6.377 (Decline)	4.022 (Decline)	9.095 (Rise)
<b>10-Yr Mobility Ratio</b>	62.538	17.326 (Decline)	10.536 (Decline)	8.560 (Decline)	N.A.

Note: The shaded box shows an improvement of fortunes relative to the earlier cohort at the same age, and all this shows up in the 2011 Census.

**Table 17**, which shows the mobility and immobility ratios for the different cohorts at different ages or phases in their career, again confirms that upward mobility has clearly improved for the

5th cohort. This cohort, in 1981-85, enjoys both higher mobility at the low end and at the upper end, with the 5 year immobility ratio falling to 0.501, noticeably smaller than the 0.581 for the 4<sup>th</sup> cohort, and the 5 year mobility ratio rising sharply from 4.022 to 9.095. The improvement in upward mobility opened up due to the retirement wave obviously would not benefit cohorts born in 1976-80 when they had worked only 10 years, since in 2006 most of the postwar babyboomers had not started retiring yet.

This paper distinguishes itself from other papers on earnings mobility in being the first one to use comparative cross section data rather than longitudinal data or cross section plus recall data. It is admitted that ideally earnings mobility is best studied with longitudinal data. In its absence, cross section plus recall data appears to be the only alternative way to handle the problem. Our paper shows that comparative cross section data still provide important clues to questions about upward mobility opportunities. This new methodology is simple and intuitive, and does not depend on the availability of longitudinal data. Yet it allows us to compare the fortunes of different cohorts over several decades.

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## Appendix

**Table A1: The respective age and sample size of cohorts in each census and by-census year**

	<b>Born in 1961-1965</b>	<b>Born in 1966-1970</b>	<b>Born in 1971-1975</b>	<b>Born in 1976-1980</b>	<b>Born in 1981-1985</b>	<b>Born in 1986-1990</b>
<b>1986</b>	21-25 (4,572)	N.A.	N.A.	N.A.	N.A.	N.A.
<b>1991</b>	26-30 (21,883)	21-25 (16,911)	N.A.	N.A.	N.A.	N.A.
<b>1996</b>	31-35 (23,709)	26-30 (20,472)	21-25 (16,585)	N.A.	N.A.	N.A.
<b>2001</b>	36-40 (4,619)	31-35 (4,122)	26-30 (3,791)	21-25 (3,052)	N.A.	N.A.
<b>2006</b>	41-45 (4,776)	36-40 (3,971)	31-35 (3,869)	26-30 (3,642)	21-25 (2,978)	N.A.
<b>2011</b>	46-45 (23,729)	41-45 (20,245)	36-40 (19,703)	31-35 (19,002)	26-30 (19,493)	21-25 (13,657)

N.A. = Not Available.

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